

Atty Dkt. No.: 10030355-1
USSN: 10/699,281

REMARKS

In view of the above amendments and the following remarks, the Examiner is requested to allow claims 1-13 and 21-25, the only claims under examination in this application. Pursuant to the arguments advanced below with respect to the restriction requirement, the Examiner is further requested to allow Claims 14-20.

Claim 21 has been amended to recite *nucleic acid analyte* in the last line, pursuant to the Examiner's suggestion. Claim 22 has been amended to recite language present in Claim 14 upon which Claim 22 ultimately depends. Support for these amendments can be found in Claims 21 and 14, respectively. No new matter has been added.

Drawings

Applicants acknowledge with appreciation the acceptance of the drawings as filed on October 30, 2003.

Restriction Requirement

Applicants reiterate their traversal of the requirement for restriction mailed on January 18, 2006. Applicants note that the Examiner has examined and rejected Claims 21-24 over cited art. However, Claim 21 and claims dependent upon Claim 21 depend directly or indirectly upon Claim 14, which is part of non-elected Group II in the requirement for restriction. Implicit in this rejection is the examination of the subject matter of Claim 14 with the examination of Claims 21-25 of elected Group I. Therefore, there can be no additional search burden in examining Claim 14 because Claim 14 has already been searched and examined.

Furthermore, the Examiner has rejected the claims of Group I and seven claims (Claims 14-20) of Group II, i.e., Claims 1-25 under 35 U.S.C. § 112, second paragraph. This is a further indication that part of Group II has already been examined and should be rejoined with Group I.

Accordingly, Applicants request rejoinder of Group II with Group I, or at least rejoinder of Claims 14-20 with elected Group I.

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Claim Rejections – 35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 1-25 under 35 U.S.C. § 112, second paragraph for alleged indefiniteness. This rejection is respectfully traversed. Applicants respectfully direct the Examiner's attention to the above remarks regarding the fact that this rejection includes non-elected Claims 14-20.

The Examiner asserted that the phrase *the amount* in Claim 1 lacks antecedent basis. Applicants submit that no antecedent basis is necessary for this phrase because the amount of binding complexes detected is a definite amount that is employed to determine the amount of depurination reaction products. As such, the use of the definite article *the* is proper. This rejection may be withdrawn.

The Examiner asserted that Claim 3 is indefinite because it is allegedly unclear to what quantity the amount in the phrase *a relative amount* is relative. Applicants respectfully direct the Examiner's attention to page 23 of their specification wherein relative and quantitative amounts are disclosed. It is clear from context that a relative amount means an amount relative to features that have not undergone depurination. This rejection may be withdrawn.

The Examiner asserted that the recitations of *early* and *late* in Claim 8 are allegedly indefinite. Claim definiteness is not determined by reading a claim in isolation or in a vacuum. The claim is read *inter alia* in light of the application disclosure. MPEP § 2173.02. Applicants' specification makes it clear how Applicants are using the terms in question. See, for example, page 17, third paragraph, and Figures 1 and 2 with their accompanying description at page 6. This rejection may be withdrawn.

The Examiner asserted that Claim 21 is allegedly indefinite by virtue of the term *the surface*. Applicants submit that because there is only one surface on which binding complexes are detected, the use of the definite article *the* is proper. This rejection may be withdrawn. The Examiner further suggested that *said analyte* in the last line of Claim 21 be changed to *said nucleic acid analyte*. This change has been made.

The Examiner asserted that there is insufficient antecedent basis for the phrase *said depurination probes nucleic acids* in Claim 22. Present Claim 22 recites *said nucleic acid depurination features*. Nucleic acid depurination features are

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recited in Claim 14 upon which Claim 22 ultimately depends. This rejection may be withdrawn.

Claim Rejections – 35 U.S.C. § 102

Claims 1-7, 11-13, and 21-24 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Church et al. (U.S. Patent No. 6,326,489). This rejection is respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Verdegaal Bros. v. Union Oil of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Contrary to the Examiner's description of Church et al., the document does not disclose detecting the amount of binding complexes in a depurination probe feature to determine the presence of depurination reaction products on the surface of the array. Church et al. is concerned with second strand synthesis by primer extension. Because depurination is not a problem in synthesis by primer extension, Church is not detecting depurination reaction products, nor would there be any reason to do so. The passage of Church et al. cited by the Examiner (Column 13, line 63 to Column 14, line 12) is concerned only with confirmation of successful synthesis of the second strand of the double-stranded DNA array, and not with detection of depurination reaction products.

Accordingly, Church et al. does not identically disclose each and every element of Applicants' claims. As such, there is no anticipation. Withdrawal of this rejection is respectfully requested.

Claim 21 was rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by McGall (U.S. Patent No. 5,843,655). This rejection is respectfully traversed.

Contrary to the Examiner's description of McGall, McGall does not determine amounts of depurinated oligonucleotides by hybridization between a depurination probe and a target nucleic acid that binds specifically to the depurination probe.

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The sections of Column 1 of McGall cited by the Examiner that deal with hybridization are general background information that are not germane to McGall's invention.

In actuality, McGall tests for depurination by exposing synthesized oligonucleotides to cleavage conditions, e.g., alkaline conditions, that tend to cause backbone cleavage of depurinated oligonucleotides. The amount of uncleaved oligonucleotides is then determined. See Columns 9 and 10 of McGall. This is not the same as forming a binding complex between a depurination probe and a target nucleic acid that binds specifically to the depurination probe and detecting the amount of the binding complexes.

Accordingly, McGall does not identically disclose each and every element of Applicants' claims. As such, there is no anticipation. Withdrawal of this rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1-13 and 21-23 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over McGall, *supra*, in view of Church et al., *supra*. This rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation either in the cited references themselves or in the knowledge generally available to an art worker, to modify the reference or to combine reference teachings so as to arrive at the claimed method. Second, the art must provide a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations (MPEP § 2143). The teaching or suggestion to arrive at the claimed method and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure (MPEP § 2143 citing with favor, *In re Vaeck*, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)).

As reviewed above in Applicants' remarks *supra* regarding the § 102(b) rejection over McGall, McGall's invention does not involve hybridization to detect the amount of depurinated oligonucleotides. This fact is acknowledged by the Examiner in the last two lines of page 10 of the Office Action.

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Furthermore, as reviewed above in Applicants' remarks *supra* regarding the § 102(b) rejection over Church et al., Church et al. is not measuring the amount of binding complexes in a depurination probe feature to determine the presence of depurination reaction products on the surface of the array. Instead, Church et al. is concerned with a qualitative confirmation of successful synthesis of the second strand of a double-stranded DNA array. Therefore, Church et al. does not remedy the deficiency of McGall.

Accordingly, for at least the reason that the combination of cited documents does not teach or suggest all of the elements of Applicants' claims, there is no *prima facie* obviousness. Withdrawal of this rejection is respectfully requested.

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CONCLUSION

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Bret Field at (650) 833-7770.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10030355-1.

Respectfully submitted,



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